# Chase-Recapture Experiment Q&As

**Why?**

Why is the National Marine Fisheries Service (NMFS) conducting the chase-recapture experiment? The chase-recapture study is a required component of the stress studies mandated by Congress in the Marine Mammal Protection Act (MMPA), as amended by the International Dolphin Conservation Program Act (IDCPA), to evaluate whether the "intentional deployment on, or encirclement of, dolphins by purse-seine nets is having a significant adverse impact on any depleted dolphin stock". The IDCPA law specifically requires conducting an experiment that involves the repeated chasing and capturing of dolphins. NMFS has held several consultations with the Marine Mammal Commission, the Inter-American Tropical Tuna Commission, environmental groups, and experts in the fields of dolphin biology, stress physiology, veterinary medicine, and population dynamics to determine the most effective way to assess the potential impacts of stress eastern tropical Pacific Ocean (ETP) dolphin stocks are subject to because of the purse-seine fishery. The Chase Encirclement Stress Studies or "CHESS" experiment resulted from these consultations and will fulfill the IDCPA research mandate as well as provide the best scientific information available on the effects of fishery-induced stress on ETP dolphins.

Why have NMFS scientists chosen to use these specific research techniques to study these dolphins? Specifically, the IDCPA requires NMFS to conduct an "experiment involving the repeated chasing and capturing of dolphins by means of intentional encirclement." The sampling techniques are no more invasive than those used in research of wild dolphins and on animals in captivity for decades.

Why can't NMFS find out what it needs to know about stress in dolphins from experimenting on captive animals? Much research on the physiology and health of dolphins has been conducted on animals housed in marine parks and aquaria. Indeed, some of the results of this research will be used to provide information on dolphins and their response to capture and stress. However, there are several key reasons that captive dolphins cannot be wholly substituted to satisfy the mandates of this experiment, including the need for the use of the chase-recapture operations to determine stress levels, as required by the section 304 of the IDCPA. Also, NMFS believes that due to the distinctive nature of ETP pelagic (offshore) dolphins, it is critical that the chase-recapture study includes the very dolphin species that are directly involved in tuna purse seine fleet activities. These species are susceptible to human-induced stress, they are not successfully kept in captivity, and are therefore not readily available in captive situations for controlled experimentation.

**Who?**

Who will conduct the chase-recapture study? The chase-recapture experiment will be led by NMFS scientists from the Southwest Fisheries Science Center in La Jolla, California. They will be joined by a expert team of marine mammal health and biology experts, including veterinarians and others skilled in the capture, handling, and biological sampling of live dolphins.

**What?**

What is the chase-recapture experiment? CHESS consists of a suite of research projects that form the basis of the "experiment involving the repeated chasing and capturing of dolphins by means of intentional encirclement", mandated by Congress in the International Dolphin Conservation Program Act (IDCPA). The chase-recapture experiment is one component of the stress studies outlined in the IDCPA to evaluate whether the "intentional deployment on, or encirclement of, dolphins by purse-seine nets is having a significant adverse impact on any depleted dolphin stock." The goal of the chase-recapture study is to mimic actual fishing operations and to provide sound scientific data on physiological indicators of stress in chased and captured dolphins, and, if possible, to estimate a range of consequences for the individual dolphin's survival and reproduction.

What are the specific scientific components of the research projects involved? The chase-recapture experiment will consist of a suite of complementary research projects that separately address different ways in which chase-recapture stress may manifest itself. The research techniques will include: a) analyses of single and repeat blood samples; b) molecular analyses of skin samples; c) measurement of thermoregulatory processes; d) satellite tagging & tracking; and e) documentation of reproductive status and, if it occurs, cow/calf separation between successive chases. These individual measures, when combined, will provide insights into the potential for fishery-caused stress in the sampled dolphins. Additionally, some of the physiological data may allow estimation of quantitative or qualitative effects on survival and reproduction of individuals, which can be included in a population dynamics model to estimate a range of potential population-level effects. The individual research projects were selected to complement each others' weaknesses and strengths wherever possible, while including only projects that are logistically compatible in the course of a single research program.

What is the current status of the targeted dolphin stocks? The three dolphin stocks targeted for this experiment are considered depleted under the MMPA due to historically high mortality levels in the tuna purse seine fishery. These stocks are the northeastern offshore spotted dolphin, the eastern spinner dolphin, and the coastal spotted dolphin. As part of the IDCPA research program, abundance estimates for these three stocks in 1998-99 average 781,011 for northeastern offshore spotted dolphins; 803,743 for eastern spinner dolphins; and 96,687 for coastal spotted dolphins.

What other marine species will be impacted by this experiment? No other marine species will be targeted for the experiment, but if captured incidentally during the fishery operations, samples from some other species of small cetaceans (whales, dolphins, and porpoises) would be considered relevant to the overall study because they occasionally interact with the tuna purse-seine fishery. Unlike normal tuna fishing operations, no tuna or any other fish will be retained during this experiment and so should not be impacted. In the unlikely event that a sea turtle is caught during the study, it will be immediately released.

What is the cost of this experiment? Where did this money come from? In the IDCPA, Congress authorized $4 million for 1998, $3 million for 1999, $4 million for 2000, and $1 million for 2001 for the overall mandated research program. The chase-recapture experiment will cost approximately $1.6 million dollars. The majority of this will be used to charter a commercial tuna purse seine vessel experienced in the chase, encirclement, and release of dolphins associated

with the tuna fishery in the ETP.

What are the other components of the IDCPA-mandated stress studies? The IDCPA requires NMFS to conduct three years of dolphin abundance surveys in the ETP and the following stress-related studies: a review of relevant stress-related research (i.e. stress literature review), a three-year series of necropsy samples from dolphins obtained by commercial vessels, and a review of relevant historical demographic and biological data related to ETP dolphins and dolphin stocks. The abundance surveys were completed in December 2000. The review of relevant stress-related research was completed in 1999. The necropsy program was initiated in 1997 and is still ongoing. The historical demographic and biological data review is underway and will be completed by the end of this year. The results of all IDCPA-required studies will undergo extensive analyses and peer review and verification by NMFS and other independent scientists.

**When?**

When will the chase-recapture experiment take place? The research project will be conducted during approximately two months at sea, from August to October 2001, aboard the NOAA ship McArthur, in cooperation with a chartered tuna purse seine vessel experienced with fishing on dolphins.

When will the results of the experiment be made available to the public? The public will be able to follow the progress of the chase-recapture study on the NMFS Southwest Fisheries Science Center web site at: http://swfsc.nmfs.noaa.gov/mmd/2001cruises/CHESSFront.htm. The results of the samples/data collected during the research experiment will take several months to analyze. The analyses will be peer-reviewed by other NMFS and independent scientists and incorporated into the final IDCPA Science Research Program Report. This report will likely be available to the public in fall 2002.

**Where?**

Where will the chase-recapture experiment be conducted? The exact location of the study site will be dependent on weather and dolphin densities, but will be within the core area for the target dolphin stocks between the coast of Mexico/Central America and 120°W longitude and between 5°N and 25°N latitude.

Where can the public find more information about NMFS Tuna/Dolphin Program research and other activities? There are several resources of information about the NMFS Tuna/Dolphin Program, including three web sites that contain detailed information about research, policy, and related activities. Those web sites are:

- the NMFS Office of Protected Resources web site (http://www.nmfs.noaa.gov/prot_res/PR2/Tuna_Dolphin/tunadolphin.html)
- the NMFS Southwest Fisheries Science Center web site (http://swfsc.nmfs.noaa.gov/mmd/2001cruises/CHESSFront.htm)
- the NMFS Southwest Regional Office web site (http://swr.ucsd.edu).

The chase-recapture study permit authorization under the MMPA, the accompanying Environmental Assessment, and other related documents, can be found at: http://www.nmfs.noaa.gov/prot_res/overview/permits.html.

**How?**

How does the chase-recapture experiment fit in with other IDCPA-mandated research? The combined results of all studies mandated in the IDCPA (chase/recapture experiment, population abundance surveys, a review of relevant stress-related research, necropsy samples from dolphins killed in the commercial fishery, and a review of historical demographic and biological data from the affected dolphin stocks), in addition to other relevant research studies not specifically required by the IDCPA, will be included in a final report to Congress evaluating potential adverse effects of the fishery on the dolphin stocks.

How will the dolphin capture and specific sampling procedures be conducted? The scientific research permit authorized under the MMPA contains detailed information about the individual project components and the methodology that will be used for each. This application can be viewed at http://www.nmfs.noaa.gov/prot_res/PR1/Permits/pr1permits_review.html.

How many dolphins will be set on and sampled in this experiment? It is expected that between 30-60 sets on dolphins will occur during this experiment (a small fraction of the estimated 10,000 dolphin sets made annually by the ETP tuna purse seine fishery). We estimate that up to nine dolphins will be handled and sampled per set, with the dolphin school size ranging from about 100-400 dolphins. This results in a rough estimate of 200-600 dolphins being handled and sampled throughout the course of the experiment, though as many as 24,000 dolphins may be chased and encircled (this is the logical maximum number affected, but it is unlikely to be realized in the field).

How will the public be able to track the research team's progress during the experiment? Anyone interested in the near real-time progress of the chase-recapture study may visit the NMFS Southwest Fisheries Science Center web site at:

http://swfsc.nmfs.noaa.gov/mmd/2001cruises/CHESSFront.htm

This web site will contain up-to-date information, personal accounts from the research team, and photos showing the progress of the chase-recapture experiment in near real-time. This will allow the public unique insight into this unprecedented dolphin research.

How will the results of this experiment impact the "dolphin-safe" definition? The results of this experiment and the other research NMFS is conducting under the IDCPA will contribute to the Secretary of Commerce's final determination in 2002 as to whether the intentional deployment on or encirclement of dolphins with purse seine nets is having a "significant adverse impact" on any depleted dolphin stock in the ETP. If NMFS concludes that a significant adverse impact is either not occurring or has not been detected, the "dolphin-safe" labeling standard of the Dolphin Protection Consumer Information Act will replace the previous standard. If the Secretary makes a finding that intentional deployment on and encirclement of dolphins ***is*** having a significant adverse impact on any depleted dolphin stock, the dolphin-safe label will signify that no dolphins were chased or encircled during the entire trip in which the tuna was

caught and that no dolphins were killed or seriously injured during the set in which the tuna was harvested. If the Secretary's finding is that the intentional deployment on and encirclement of dolphins ***is not*** having a significant adverse impact on any depleted dolphin stock, the dolphin-safe label will signify that no dolphins were killed or seriously injured during the set in which the tuna was harvested.